



## EPA Region 8 Internet Resources for Pollution Prevention (P2) in Agriculture

### What is Pollution Prevention?

Pollution Prevention, or P2, means “source reduction,” as defined under the Pollution Prevention Act, and includes practices that reduce or eliminate the creation of pollutants through

- increased efficiency in the use of raw materials, energy, water, or other resources, or
- protection of natural resources by conservation

Thus, P2 aims to prevent or reduce pollution at the source – so pollution isn’t created in the first place and never enters the environment.

### What does Pollution Prevention mean in agriculture?

In the agricultural sector, P2 approaches include:

- Reducing the use of water and chemical inputs
- Adoption of less environmentally harmful pesticides or cultivation of crop strains with natural resistance to pests
- Protection of sensitive areas; and
- Improved livestock waste management and beneficial use of nutrients



### Why is Pollution Prevention important in agriculture?

American agriculture is noted worldwide for its high productivity, quality, and efficiency in delivering goods to the consumer. However, when improperly managed, agricultural practices have the potential to pollute and degrade the environment. Adopting pollution prevention measures may significantly reduce the impact of agricultural activities on the environment and could result in cost savings to producers.

### What are some of the main Pollution Prevention approaches in agriculture?

There are many opportunities to employ pollution prevention practices in agriculture, including reducing non-point source pollution through proper nutrient management, soil conservation, and integrated pest management. Conserving water and using energy wisely also help to prevent pollution in agriculture.

## Non-point Source Pollution

Non-point source (NPS) pollution from agriculture is the leading source of impairments to surveyed rivers and lakes. Agricultural activities that might cause NPS pollution include confined animal activities, grazing, plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. The resulting pollutants from these activities include sediment, nutrients, pathogens, pesticides, and salts.

EPA: *National Management Measures to Control Non-point Pollution from Agriculture*  
<http://www.epa.gov/owow/nps/agmm/>

#### a. Nutrient management

Properly managing nutrients, such as chemical fertilizers and manure, will not only prevent pollution but could also save money.

- ❖ *CORE 4: Nutrient Management*  
<http://www.ctic.purdue.edu/Core4/nutrient/nutrmgmt.html>
- ❖ *Natural Resources Conservation Service: Comprehensive Nutrient Management Plan*  
[http://www.nrcs.usda.gov/programs/afo/cnmp\\_guide\\_600.75.html](http://www.nrcs.usda.gov/programs/afo/cnmp_guide_600.75.html)

#### **b. Soil conservation**

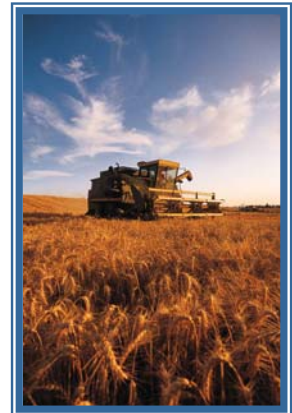
Conserving soils is critical in maintaining healthy, productive land, preventing non-point source water pollution by sediments, and reducing air pollution from wind erosion.

- ❖ *EPA's Software for Environmental Awareness: Best Management Practices for Soil Erosion*  
<http://www.epa.gov/grtlakes/seahome/erosion.html>
- ❖ *CORE 4: Conservation Tillage*  
<http://www.ctic.purdue.edu/Core4/CT/CT.html>

#### **c. Integrated pest management**

By employing commonsense, effective pest control methods through the use of integrated pest management (IPM), the amount of chemical pesticides dispensed into the environment can be reduced.

- ❖ *Sustainable Agriculture Research and Education: A Whole-Farm Approach to Managing Pests (Case Studies)*  
<http://www.sare.org/publications/farmpest.htm>
- ❖ *High Plains IPM*  
<http://www.highplainsipm.org/>



### **Water Conservation**

The agricultural industry is one of the largest users of water resources in the country. Water conservation strategies such as irrigation scheduling and efficient delivery mechanisms not only help to conserve this precious resource but also help reduce pollution from unnecessary runoff.

- ❖ *Cleaner Water Through Conservation (Case Studies)*  
<http://www.epa.gov/water/you/intro.html>
- ❖ *Colorado State University: Best Management Practices for Irrigation Management*  
<http://www.ext.colostate.edu/pubs/crops/xcm173.pdf>

### **Energy Efficiency**

Energy expenses represent a significant portion of a farm budget, often accounting for up to 10 percent of total expenses (USDA, 2004). Increased energy efficiency will not only conserve energy resources and prevent pollution but will also increase farm profit margins.

- ❖ *American Council for an Energy-Efficient Economy: Energy Efficiency in Agriculture*  
<http://www.aceee.org/industry/agriculture.htm>
- ❖ *National Sustainable Agriculture Information Service: Energy & Agriculture*  
<http://attra.ncat.org/energy.html>

Where can I find more general information about Pollution Prevention in agriculture?



- ❖ **EPA's Ag Center:** provides a listing of agriculture P2 publications  
<http://www.epa.gov/agriculture/apol.html>
- ❖ **Peaks to Prairies:** provides a database of agricultural pollution prevention projects in Region 8  
[http://peakstoprairies.org/p2bande/agprojects/index\\_me.cfm](http://peakstoprairies.org/p2bande/agprojects/index_me.cfm)

What kind of technical and financial assistance is available?

There are several funding sources available to assist with the implementation of P2 approaches in agriculture. Following are a few of the possibilities:

- ❖ **USDA Farm Service Agency:** Provides payments for planting permanent vegetation on idle, highly erodible farmland (Conservation Reserve Program), and provides payments for installing specific conservation practices (Conservation Reserve Enhancement Program)  
<http://www.fsa.usda.gov/dafp/cepd/default.htm>
- ❖ **USDA Soil and Water Conservation Assistance:** Provides cost share and incentive payments to farmers and ranchers to voluntarily address threats to soil, water, and related natural resources, including grazing land, wetlands, and wildlife habitat.  
<http://www.nrcs.usda.gov/programs/swca/>
- ❖ **USDA Rural Development, Farm Bill 9006:** Provides grants for agricultural producers and rural small business to purchase renewable energy systems and make energy efficiency improvements.  
<http://www.rurdev.usda.gov/rbs/farmbill/>

Who can I contact for more information?

**U.S. EPA, Region 8**

8P-P3T, Pollution Prevention  
999 18<sup>th</sup> Street, Suite 300  
Denver, CO 80202  
1 800 227-8917  
<http://www.epa.gov/region8/>

**Tribal Pollution Prevention**

<http://www.tribalp2.org/index.php>

**Colorado Department of Agriculture**

700 Kipling Street, Suite 4000  
Lakewood, CO 80215  
(303) 239-4140  
<http://www.ag.state.co.us/>

**South Dakota Department of Agriculture**

523 East Capitol Avenue  
Pierre, SD 57501-5254  
1 800 228-5254 or (605) 773-5436  
<http://www.state.sd.us/doa>

**Montana Department of Agriculture**

P.O. Box 200201  
Helena, MT 59620-0201  
(406) 444-3144  
<http://agr.state.mt.us/>

**Utah Department of Agriculture and Food**

P.O. Box 146500  
Salt Lake City, UT 84114-6500  
(801) 538-7100  
<http://ag.utah.gov>

**North Dakota Department of Agriculture**

600 E. Boulevard Avenue, Dept. 602  
Bismark, ND 58505-0020  
1 800 242-7535 or (701) 328-2231  
<http://www.agdepartment.com/>

**Wyoming Department of Agriculture**

2219 Carey Avenue  
Cheyenne, WY 82002  
(307) 777-7321  
<http://wyagric.state.wy.us/index.htm>